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AUGUST, 1903.

JOHN MICHAEL MAISCH, AN IDEAL PHARMACIST.

By M. I. Wilbert,
Apothecary at the German Hospital, Philadelphia.

There are but few active workers in pharmacy that do not know and honor the name of John Michael Maisch, the one-time professor of materia medica and botany in the Philadelphia College of Pharmacy. So deeply impressed is his work on the everyday course of pharmaceutical progress in this country, that it is at times difficult to realize that his lips have been sealed and his pen has been stilled for nearly ten long years. Ten years constitute a period of time that is ample to indicate the value or worth of a life that has been lived; a period of time sufficiently long to demonstrate and point out to us the strong points of a noble nature, and to spread the name and fame of the few able and willing workers who, during their active life, thought little of themselves, but were constantly striving to improve the condition of others. The same period of time, on the other hand, has been amply sufficient to obliterate all trace of thousands that insisted on living for themselves alone.

In the annals of pharmacy, it would be difficult indeed to find a name that more nearly represents the ideal of what a pharmacist should strive to be, than does that of John M. Maisch. While there have been greater chemists whose early training was laid in the apothecary's shop, and while there have been more original and more thoroughly equipped botanists who at one time may have handled a mortar and pestle, there have been but few men connected with pharmacy that have had a more perfect knowledge of the facts that are needed in connection with a proper understanding of the

great variety of substances that come together on the shelves of the pharmacist.

Before going further, it may be well to consider what is necessary to constitute a good practical pharmacist.

Beside a good foundation in the elements of an ordinary education, including a working knowledge of at least several languages besides his own, the practical pharmacist should be sufficiently proficient in botany to recognize growing plants, by accepted methods of analysis. He should be an expert pharmacologist, at least thoroughly familiar with the appearance and properties of the materials that are likely to be used in the practice of medicine in his own particular neighborhood. To do this he must be so thoroughly grounded in the principles of chemistry, that he would be able to apply them in a practical way, not only for testing the chemical substances with which he comes in contact, for identity and purity, but he must also be able to do original work in the analysis and synthesis of compounds, or in the examination of organic substances for their proximate constituents.

He should also be thoroughly familiar with the construction and use of the microscope, so that he can, and does, use it in connection with his investigations in the field of botany and chemistry. Then he must have such a practical knowledge of the possible application and uses of the different substances with which he comes in contact that he can give intelligent and practical information to such as choose to inquire as to their uses.

In addition to these necessary rudiments that he should be well versed in, our practical pharmacist should have some knowledge of the various other subjects that are usually classed together as natural sciences, particularly zoology, geology and mineralogy. In addition to this necessary practical information he should be able to demonstrate that he has within himself the possibilities of doing original work, and of thinking for himself. And finally, to show that he has the interests of his fellowmen at heart, and has been able to raise his ambitions above the ordinary commercial tendencies of the times, he should be willing and able to impart his knowledge to others, so as to allow them to advance with, and if need be, to surpass him. To do this he must be able to write out his experiments and achievements in such a way that others may grasp his ideas and duplicate or perfect his discoveries. Such a man

was John Michael Maisch. Who of the thousands that visited the historical exhibition that was held in Philadelphia in 1902, in connection with the semi-centennial celebration of the American Pharmaceutical Association, was not impressed with the number and variety of the exhibits bearing his name. A simple enumeration of these different objects would emphasize the fact that here, indeed, had been a fair example of the practical pharmacist. Then there is the other criterion: as a man who has the welfare of his fellowmen at heart, a true pharmacist will communicate the results of his researches to others. Here again, John M. Maisch comes fully up to the requirements, his published essays number upwards of 400, and are of such a high ethical and scientific standard that they may well be considered a proper and a lasting monument of a life that was spent for the betterment of his fellowmen.

Any one who will take even a casual survey of the number and variety of subjects that were inquired into, in these numerous papers, will naturally ask, What manner of man was John M. Maisch, and what phenomenal educational advantages did he enjoy, to bring him in contact with these numerous subjects, or to enable him to deal with them in the thorough and matter-of-fact way that immediately evidences the master?

Those who are interested in the more detailed accounts of his early history will find interesting material in the biographical sketches published in the *Alumni Report* of the P.C.P., by the editor (Vol. XXX, 1893, p. 5), in the AMERICAN JOURNAL OF PHARMACY, by Prof. Joseph P. Remington (1894, p. 1), and in the proceedings of the Philosophical Society, by Dr. Charles S. Dolley (1894, p. 345). The object of the present sketch is more to collate and record his achievements and the recognitions that were awarded to him. It may be well, nevertheless, to incorporate an outline of his early life so as to show that he not only did not enjoy any phenomenal educational advantages, but that he, in many respects, was sadly hampered and sorely disappointed, by the failure to realize his wish for a university training.

John Michael Maisch, who, as is well known, died September 10, 1893, was born in Hanau, Germany, on January 30, 1831. After attending the elementary schools of his native city he was apprenticed to one of the goldsmiths of Hanau, for which the city had been celebrated for a great number of years. This apprenticeship was of

short duration, however, lasting only a few days, as the boy, being only twelve years of age, was still required by law to attend school, and the necessary release, by the proper authorities, was not obtain-

JOHN M. MAISCH
at the age of 26, taken from an oil painting.

able. Young Maisch then attended the higher schools of his city, and also received private instruction in French, Latin, chemistry and the natural sciences, from several of his teachers, who took a

personal interest in him with a view of preparing him for a university course.

The physical strength of the young man had been overestimated, however, and before he had finished his preliminary studies he was prostrated by a prolonged illness that brought all his hopes of a university training to an abrupt termination.

The now seventeen-year-old boy, who had been brought in close contact with the higher ideas and ideals of the more progressive German scholars, was just in the proper frame of mind to be carried away by the agitation for personal rights that swept over the central part of Europe in 1848. It is not surprising therefore that we hear of him as having been arrested in a neighboring State for teaching and believing what was then considered a revolutionary doctrine—the necessity of a united fatherland with a constitutional government.

Like many other progressive Germans who were years ahead of their times, John M. Maisch emigrated to America, where free institutions such as his fancy had depicted already existed.

Mr. Maisch arrived in the city of Baltimore in 1849, and not finding any more congenial occupation was employed in a box factory for several months. Later he made the acquaintance of a Dr. Wiss, who was about to open a drug store, and who saw in the comparatively well-educated and studiously inclined young German the possibility of an able assistant. The store was opened in 1850, and from this time we may date John M. Maisch's connection with pharmacy.

This store, for some unknown reason, was sold a few months later, but young Maisch, seeing here a possibility for congenial occupation, continued in the drug business.

From Baltimore he went to Washington, from there to Philadelphia, and later to New York; this period constituting practically a series of "Wander-Jahre" in his now chosen profession.

That he was not idle during these years is evidenced by two silver medals, dated 1853, that were shown at the historical exhibition last year: one from the Maryland Institute for the Promotion of the Mechanic Arts, Baltimore, and the other from the Metropolitan Mechanic Institute; both of these were awarded to John M. Maisch for an exhibition of a collection of chemicals of his own manufacture. In 1856 Mr. Maisch returned to Philadelphia, where he was subsequently employed in the store of Robert Shoemaker & Co.

This constitutes practically the beginning of his active and serious career. In the same year he became a member of the American

PHILADELPHIA, October, 1859.

SIR:—

The undersigned takes this method to inform you that he has assumed the position of Superintendent of the practical department of

PARRISH'S SCHOOL OF PHARMACY.

It will be his endeavor to continue the course of instruction upon the same basis that has been pursued in this establishment heretofore, and he hopes thereby, to preserve the high reputation in which it has been held during the ten years of its existence.

The *Pharmaceutical classes* will consist of four students, the sessions will be held twice a week—one and a-half hour each.—The instructions will embrace all manipulations required in a pharmaceutical establishment.

Besides the instruction in practical pharmacy, a

Laboratory for Practical & Analytical Chemistry,

designed in particular for the wants of pharmaceutists and physicians, will be opened. A limited number of students can be accommodated.

The course of instruction in *Practical Chemistry* will embrace the preparation of elementary bodies and their compounds, researches on the properties, reactions, combinations and decompositions of the same, and the most approved modes for investigating their purity.

In *Analytical Chemistry*, the preparation of the test liquids, the qualitative and quantitative analysis of inorganic, and of the more prominent organic compounds, and the analysis by means of the blow pipe, will be taught. Instruction will also be given in the *proximate analysis* of crude vegetable bodies, to which the particular attention of medical and pharmaceutical students is visited.

For students sufficiently advanced, it is the intention to pursue a practical course of *toxicological analysis*, for which purpose the various organs and secretions of poisoned animals, as well as food, which has been intentionally poisoned, will be subjected to qualitative, and as far as possible, also to quantitative analysis.

The Chemical Laboratory will be open every day during the week, Saturdays excepted, from 9 A. M. to 4 P. M. A convenient hour will be set apart on each Saturday for examination, and to review and discuss the labors of the preceeding week.

TERMS—For a quarterly course, in practical pharmacy, $10 00
Including the Lectures of Mr. Edward Parrish, 15 00
For Practical or analytical chemistry per month, 25 00
(The use of apparatus, tests, &c., included.)

Applications for instructions, or for further particulars, may be made at Mr. Parrish's Lectures, in College Avenue, on Wednesday and Saturday mornings between 8 and 9 o'clock, or at the Laboratory, 800 Arch Street.

J. M. MAISCH.

Leaflet Announcing J. M. Maisch's First Work as a Teacher.

Pharmaceutical Association, and three years later he joined the Philadelphia College of Pharmacy.

An interesting anecdote, illustrating the studious habits of the

young pharmacist, was at one time told by Mr. Shoemaker (*P.C.P. Alumni Report*, Vol. XXX, p. 7).

Some time after being employed by Robert Shoemaker & Co., Mr. Maisch was taken quite ill and went home. His employer, who took more than an ordinary interest in the young man, called several days later to inquire how he was progressing. He found him, still sick, propped up in bed, with a book on his lap and a table with retorts, test tubes and other chemical appliances alongside, carrying on chemical experiments. This anecdote also illustrates the indomitable spirit and the ceaseless activity that permeated his whole subsequent career.

A man with the scientific turn of mind possessed by young Maisch would naturally grasp at an opportunity to develop himself along lines of original research and the practical application of his knowledge. It is not surprising, therefore, that when Edward Parrish offered young Maisch the opportunity of superintending the practical instruction in his school of pharmacy, it was eagerly seized.

A reproduction of the small leaflet, published at the time, to advertise the new arrangement will be found on opposite page.

This advertisement represents, too, his first appearance as a teacher of pharmacy, an occupation which he continued in almost uninterruptedly to the time of his death.

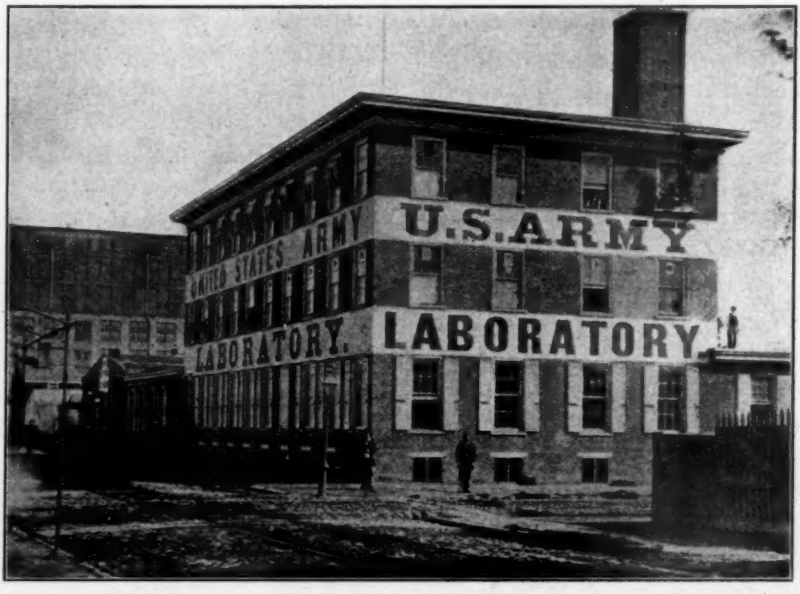
In 1861 he was offered, and accepted, the chair of materia medica and pharmacy in the College of Pharmacy of the City of New York. His time here not being fully occupied, he was fortunate enough to connect himself with the manufacturing establishment of Dr. E. R. Squibb, and thus found an opportunity of cultivating a personal acquaintance and friendship that was not alone lasting, but was also of practical advantage to him.

It was on the personal recommendation of Dr. Squibb that Professor Maisch, in 1863, was appointed Superintendent of the Army Medical Laboratory, about being established in Philadelphia.

The story of this laboratory, the kind and amount of work that was done in it, and the political as well as commercial objections that were raised to it, would make interesting reading at the present time. Some insight into its history may be had from opinions and accounts published in the AMERICAN JOURNAL OF PHARMACY during the latter years of the Civil War; also from a statistical account of the work done, given in a paper by Professor Maisch, read before

the American Pharmaceutical Society in 1866. From this latter paper it appears that the aggregate value of the products amounted to several million dollars, while the net profits resulted in a saving to the United States Government of more than $750,000.

We must go back here a few moments to outline the connection of John M. Maisch with the Philadelphia College and the AMERICAN JOURNAL OF PHARMACY. His contributions to the JOURNAL commenced in 1854 and continued uninterruptedly to the time of his death, a period of forty years, during which time by far the greater number of his original essays were published in its pages.



U. S. Army Laboratory, Philadelphia.

As noted before, he became a member of the College in 1859, and took an active part in the work of the institution from that time. He was elected to the Board of Trustees in 1860 and to the Publication Committee in 1861.

When, in the latter part of that year, 1861, he went as professor to the College of Pharmacy of the City of New York, he offered his resignation to the Philadelphia College of Pharmacy. This was not accepted, however. The secretary, *pro tem.*, at that time, Mr. Wm. C. Bakes, was instructed to notify Professor Maisch that his resig-

nation had been laid on the table, and that the annual dues connected with active membership had, on motion, been remitted for the time. On his return from New York, and while engaged at the Army Laboratory, Professor Maisch again entered actively in the work of the Philadelphia College.

After the close of the Civil War, the Army Medical Laboratory in Philadelphia was discontinued. Professor Maisch then opened a store at 1607 Ridge Avenue, Philadelphia. In the same year, 1866, he was elected to succeed Prof. Wm. Procter, Jr., in the chair of pharmacy in the Philadelphia College of Pharmacy. In the following year, 1867, with the sanction of the Board of Trustees, he exchanged chairs with Prof. Edward Parrish, who was teaching materia medica at that time. This latter branch was subsequently enlarged so as to include botany.

In this field, as professor of materia medica and botany, Professor Maisch continued for twenty-six years, striving earnestly to inculcate such rudiments of the science as would be most practical to the prospective pharmacists. How successful he was is best evidenced by the hundreds of his former students who have courted success by putting the knowledge obtained from him to practical uses.

When, in 1870, the Alumni Association decided to open the laboratory of practical chemistry and pharmacy, Professor Maisch was selected as the proper person to inaugurate the new laboratory and to direct it. The difficulties which he had to overcome in this direction are indicated in his report to the Secretary of the Alumni Association in 1872. (Eighth Annual Alumni Report.)

When Professor Procter decided that the AMERICAN JOURNAL OF PHARMACY should be published more frequently, and that his advancing years necessitated his retirement from the active direction of the editorial management, he nominated as his logical successor the occupant of the chair of materia medica and pharmacy.

This position, as editor of what was now a monthly publication, Professor Maisch filled for twenty-two years, to the satisfaction of officers of the college and to the material advantage of the contributors as well as subscribers of the JOURNAL.

As noted before, Professor Maisch as a young man had joined the American Pharmaceutical Association in 1856. He was quite a regular attendant at the meetings and a liberal contributor to the proceedings. He was elected corresponding secretary at the Phila-

delphia meeting in 1862, first vice-president at Baltimore in 1863, and in 1865, when he attended the meeting at Boston as one of the delegates of the Philadelphia College of Pharmacy, he was elected permanent secretary, which position he filled uninterruptedly to the time of his death, never missing a meeting until 1893, when failing health prevented his attendance.

His services for the American Pharmaceutical Association are amply evidenced in the twenty-seven volumes of the proceedings that were published under his direct supervision, and to which he not only contributed a large number of original articles and the regular and very complete annual reports of the permanent secretary, but his name also appears more frequently than any other among those that took an active part in the discussions of the various papers.

When, in 1870, the Philadelphia College of Pharmacy elected delegates to the decennial convention for the revision of the Pharmacopœia, John M. Maisch, with Wm. Procter, Jr., and Alfred B. Taylor, were selected to represent the College. John M. Maisch and Alfred B. Taylor were subsequently elected to serve on the revision committee, Professor Maisch serving through three decennial revisions.

This then brings us up to the period of his most active work. A review of the number of official occupations will give us a fair idea of the amount and variety of work he was able to accomplish regularly and uninterruptedly for more than twenty years.

We should, however, mention that again in 1870, at the suggestion of Professor Maisch, the Philadelphia College of Pharmacy decided to reinaugurate the system of monthly pharmaceutical meetings that had been allowed to lapse during the exciting days of the Civil War. These meetings were under the special patronage of Professor Maisch, who was a regular attendant, a liberal contributor and, what is more, was always on the outlook for new and original material from various sources.

In addition to the work in connection with these meetings, then, it will be remembered that Professor Maisch, during the same period, occupied the chair of materia medica and botany in the Philadelphia College of Pharmacy; was editor and a liberal contributor to the AMERICAN JOURNAL OF PHARMACY; was a member of the Board of Trustees of the Philadelphia College of Pharmacy; was

permanent secretary of the American Pharmaceutical Association, and a member of the Pharmacopœial Revision Committee.

In addition to these occupations, John M. Maisch took an active interest in the work of the Academy of Natural Sciences, Philadelphia, and also of the German Society, and in later years in the proceedings of the Philosophical Society.

In 1878 he was instrumental in founding the Pennsylvania State Pharmaceutical Association, in the annual meetings of which he always took an active interest, being a regular attendant and a frequent contributor to the proceedings. He, however, persistently refused to accept any office.

In addition to the numerous contributions to contemporary journal literature, Professor Maisch, in 1860, edited and revised a translation of Rochleder's Proximate Analysis of Plants and Vegetable Substances. This first appeared in serial form in the AMERICAN JOURNAL OF PHARMACY in 1861–62, and was later issued as a separate volume, sold by Charles Ellis & Son. (See review, A. J. P., 1862, p. 492.) In 1874 he edited and revised Griffith's Universal Formulary, the resulting volume being an octavo of about 500 pages, containing more than 5,000 formulas.

The first edition of the National Dispensatory appeared in 1879, followed in six months by the second. The third appeared in 1884, the fourth in 1887, the fifth in 1888, and the sixth, to which he had also contributed many corrections, in 1893, only a few months after his death.

The first edition of his Organic Materia Medica appeared in 1882, the second in 1885, the third in 1887, the fourth in 1890, the fifth in 1892, while a sixth, edited by his son, appeared in 1895. These last two works are so well and so favorably known that it will not be necessary to describe them, or even to refer to the huge amount of work that books of this kind usually represent.

The argument that working under such high pressure would have a tendency to shorten his life never appealed to Professor Maisch as a reason for relinquishing or even shirking any of the duties that fell to his lot. He gave to everything that his name was connected with his personal attention. It mattered little what the work at hand was, whether it was the writing or revision of a book or essay, the editing of the JOURNAL, the work in connection with the office of permanent secretary of the American Pharmaceutical Asso-

ciation, or as a member of a special or standing committee, he always managed to give the necessary work close and personal attention.

It would be surprising, indeed, if as a result of the gigantic amount of original work which he was able to accomplish, and did accomplish, he should not receive some material recognition of its value. That this recognition was meted out to him is evidenced by the list of honorary memberships in pharmaceutical or in scientific societies that is appended.

The one recognition that must have pleased Professor Maisch greatly, and the one that came as a fitting close to his eventful and active life, was the presentation of the Hanbury gold medal for original research in the natural history and chemistry of drugs.

This tribute, coming as it did on what was practically the eve of his death, has to us a particularly pathetic interest. It was brought to this country by Mr. Michael Carteighe, the then President of the Pharmaceutical Society of Great Britain, who had expected to present the same to Professor Maisch at the annual meeting of the American Pharmaceutical Association at Chicago, in 1893. The letter accompanying the medal, a reproduction of which is appended, fully explains the origin and significance of this award. The earlier recipients of the medal were: Flückiger, Dragendorff, John Elliot Howard, Dymock, Planchon and Hesse. This was the first, and so far the only, time it had been awarded to an American.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.
17 Bloomsbury Square.

LONDON, August 3, 1893.

Prof. John. M. Maisch.

DEAR SIR:—I have the pleasure to inform you that the adjudicators appointed under the deed of settlement of the Hanbury Memorial Fund have awarded the Gold Medal to you.

The fund, as you may be aware, was raised to establish a memorial to Daniel Hanbury, the memorial taking the form of a gold medal, which is awarded biennially for the prosecution or promotion of research in the chemistry and natural history of drugs.

The adjudicators of this award to you are the President of the Linnean Society, President of the Chemical Society, the President of the Pharmaceutical Society, the President of the British Pharmaceutical Conference, and Mr. Francis Ransom, a pharmaceutical chemist who was, prior to the award, nominated by the last named two presidents.

I am, yours faithfully,

RICHARD BREMRIDGE, *Secretary.*

Pharmaceutical Society of Great Britain.

17, BLOOMSBURY SQUARE, LONDON, W.C.

August 3rd 1893

Professor John M. Maisch

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I am, Yours faithfully

Peter Brenan

Secretary

Letter from the Secretary of the Pharmaceutical Society of Great Britain.

The appended synopsis of the accomplishments of, and the recognitions that were awarded to, the late Professor Maisch have been added to facilitate a review of the really wonderful amount and variety of lasting work that he was enabled to accomplish in addition to the everyday, and ofttimes irksome, duties of a teacher. Probably no one that did not come in close contact with Professor Maisch personally can ever appreciate the continued and painstaking care with which he followed each detail of a subject that he was interested in. Those who came in contact with him at the meetings

of the American, or Pennsylvania State, Pharmaceutical Association will remember how he was always willing to accord credit to anyone that had recorded or observed a new fact, and also how mercilessly he exposed any attempt at plagiarism.

The appended list of papers it was thought might be an incentive for others to either follow along the same lines, or at least take up and elaborate on some of the subjects that are here mentioned or partially developed.

Many of the included papers are, even to-day, of great practical interest, while all of them bear witness to an earnest attempt to discover and disseminate scientific truths. As a whole, they consti-

Obverse and Reverse of Hanbury Medal.

tute a monument to the industry and ability of an earnest and indefatigable worker, who, without exceptional educational advantages, without rare gifts of genius, and hampered with a marked accent that indicated his foreign birth, strove honestly and earnestly to cultivate and improve that portion of the field that was apportioned to him.

A Synopsis of the Achievements and a List of the Recognitions Awarded to John Michael Maisch.

Member of the American Pharmaceutical Association, 1856.

Member of the Philadelphia College of Pharmacy, 1859.

Member of the College of Pharmacy of the City of New York, 1861.

Member of the Academy of Natural Sciences, Philadelphia, 1863.

Member of the American Chemical Society, 1876.

Member of the Pennsylvania State Pharmaceutical Association, 1878.

Member of the Deutsche Chemische Gesellschaft, 1879.

Member of the American Philosophical Society, 1884.

Member of the American Academy of Political and Social Sciences, 1892.

OFFICIAL POSITIONS.

Superintendent of the practical department of Parrish's School of Pharmacy, 1859–61.

Professor of Materia Medica and Pharmacy in the College of Pharmacy of the City of New York, 1861–63.

Superintendent of the United States Army Laboratory, Philadelphia, 1863–66.

Professor of Pharmacy in the Philadelphia College of Pharmacy, 1866–67.

Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, 1867–93.

Permanent Secretary of the American Pharmaceutical Association, 1865–93.

Editor of the AMERICAN JOURNAL OF PHARMACY, 1871–93.

Author, with Alfred Stillé, M.D., LL.D., of the National Dispensatory, five editions, 1879–93.

Author of Organic Materia Medica, 5 editions, 1882–92.

A LIST OF THE PRINCIPAL PAPERS CONTRIBUTED BY PROF. JOHN M. MAISCH TO PHARMACEUTICAL LITERATURE.

1854—

On the Adulteration of Drugs and Chemical Preparations. A. J. P.

On the Changes to Which Liquor Ferri Iodidi is Subject and its Restoration. A. J. P.

1855—

On the Incompatibility of Sulphate of Quinia with the Acetates. A. J. P.

Examination of Bitartrate of Potassa. A. J. P.

Effects of Sunlight on the Syrup of Iodide of Iron. A. J. P.

Translation of M. Strecker's Paper on Quinine. A. J. P.

Contributions to Toxicology. A. J. P.

1856—

On Convenient Modes of Administering Cod-liver Oil. A. J. P.

On the Relations of Physicians and Pharmaceutists. A. J. P.

Contributions to Toxicology (three articles). A. J. P.

On an Expeditious Mode of Making Mercurial Ointment. A. J. P.

On Solution of Gutta Percha. A. J. P.

On Sulphate of Quinia and Carbonate of Ammonia in Pills. A. J. P.

On Wine of Colchicum Seed. A. J. P.

On Effervescing Powders. Proc. A. Ph. A. (A. J. P., 1857.)

1857—

On Protiodide of Mercury. A. J. P.

Solubility of Iodides in Syrupus Ferri Iodidi. A. J. P.

On Fluid Extract of Arnica. A. J. P.

On Fluid Extract of Uva Ursi. A. J. P.

On the Detection of a New Falsification of Oil of Almonds. A. J. P.

On the Use of Indigenous Plants. Proc. A. Ph. A.

American Eclectic Resinoids. Buch. Rept. f. Phar., Vol. VI.

1858—

Remarks on Some Pharmaceutical Preparations. A. J. P.

On Diluted Acetic Acid. A. J. P.

On the Preservation of Drugs from Insects. A. J. P.

Note on Syrup of Hypophosphites. A. J. P.

On the Decomposition of Quinia by the Acetates. A. J. P.

Effervescing Powders. Proc. A. Ph. A.

On the Detection of Adulterations of Volatile Oils. Proc. A. Ph. A.

On the Sale of Poisons in the United States. Buch. Rept. f. Phar., Vol. VII.

On Fluid Extracts in the United States. Buch. Rept. f. Phar., Vol. VII.

1859—

On Extractum Ferri Pomatum. A. J. P.

On the Preservation of Fluid Extracts. A. J. P.

On the New System of German Weights. A. J. P.

On the Proper Menstruum for Fluid Extracts. A. J. P.

Notes on Fluid Extract of Buchu, Cimicifuga, Serpentaria and Valerian. A. J. P.

On the Solubility of Phosphate of Iron. A. J. P.

On a New Mode of Preparing some Syrups. A. J. P.

The Behavior of Essential Oils to Iodine and Bromine. Proc. A. Ph. A.

Manufacturing Pharmacy in the United States. Buch. Rept. f. Phar., Vol. XVIII.

1860—

Examination of Oil of Peppermint. A. J. P.

On some Preparations of Calamus Root. A. J. P.

Gleanings from German Journals (three articles). A. J. P.

Alumen Exsiccatum. A. J. P.

Analysis of Commercial Glacial Phosphoric Acid. A. J. P.

Note on Benzoic Acid and some Benzoates. A. J. P.

On the Detection of Croton Oil in Mixtures. A. J. P.

Analysis of Milk. A. J. P.

Chemical Notes. A. J. P.

Alumen Ustum. Buch. Rept. f. Phar., Vol. IX.

Pharmacy in the United States. Buch. Rept. f. Phar., Vol. IX.

On Narcotic Fluid Extracts. Proc. A. Ph. A.

Hydrobromic Acid. Proc. A. Ph. A.

1861—

On Chelidonium Majus. A. J. P.

On the Adulteration of Carmine. A. J. P.

On Commercial Iron by Hydrogen. A. J. P.

On the Importation of Mineral Waters. A. J. P.

Analysis of the Chalybeate Waters of Sharon Springs, N. Y. A. J. P.

On Anacahuite Wood. A. J. P.

On the Tincture and Ferrated Tincture of Bark. A. J. P.

On the Origin of Bay Rum. A. J. P.

On the Volatile Oil of Myrcia Acris. A. J. P.

On the Ferrated Tincture of Cinchona. A. J. P.

On the Conversion of Monohydrated into Common Phosphoric Acid. A. J. P.

Gleanings from the German Journals (four articles). A. J. P.

Chemical Examination of Coca Leaves. A. J. P.

Report of the Committee on Botany. A. J. P.

On the Mineral Water Trade in the United States. Buch. Rept. f. Phar., Vol. X.

On the Medicinal Flora of the Vicinity of Philadelphia. Buch. Rept. f. Phar., Vol. X.

1862—

Gleanings from the German Journals (two articles). A. J. P.

On Commercial Belladonna Leaves. A. J. P.

Report of Committee on Herbarium. A. J. P.

Report of Committee on Progress of Pharmacy. Proc. A. Ph. A.

On the Standing of the Pharmacist in the United States Army. Buch. Rept. f. Phar., Vol. XI.

On Snake-Bite Remedies in the United States. Buch. Rept. f. Phar., Vol. XI.

1863—

On Copaiba Pills. A. J. P.

Gleanings from the German Journals. A. J. P.

Note on the Alkaloids of Menispermum Canadense. A. J. P.

Note on Podophyllum. A. J. P.

On the Solution of Tartaric Acid. Proc. A. Ph. A.

1864—

Practical and Scientific Notes. A. J. P.

On Impurities and Adulterations. A. J. P.

Gleanings from the German Journals. A. J. P.

On the Contamination of American Sulphuric Acid with Arsenic. A. J. P.

On the Assay of French Brandy and Whiskey. Proc. A. Ph. A.

On the Quality of the Sherry Wine of our Commerce and its Assay. Proc. A. Ph. A.

On Some Medicinal Spirits. Proc. A. Ph. A.

Report on Drug Market. Proc. A. Ph. A.

1865—

On the Preparation of Heavy Oil of Wine. A. J. P.

On the Active Principle of Rhus Toxicodendron. Proc. A. Ph. A. (A. J. P., 1866).

1866—

Assays of Sherry Wine. Proc. A. Ph. A.

Examination of Whiskey and Brandy. Proc. A. Ph. A.

Specific Gravity of Medicinal Chloroform. Proc. A. Ph. A. (A. J. P., 1867).

Statistics of the U. S. A. Laboratory at Philadelphia. Proc. A. Ph. A.

1867—

On Liquor Magnesiæ Citratis. A. J. P.

On Liquor Ferri Acetatis. A. J. P.
On Colchicia. A. J. P.
On Tests for the Purity of Glycerin. A. J. P.
On Carelessness in the Collection of Drugs. A. J. P.
Note on Cheap Glycerin. A. J. P.
Gleanings from the German Journals (two articles). A. J. P.
On a Permanent Solution of Pyrophosphates of Soda and Iron. A. J. P.
Review of the Pharmacopœia Helvetica (three articles). A. J. P.

1868—

Gleanings from the German Journals (three articles). A. J. P.
On Chloroform. A. J. P.
Note to Editor on False Jalap. A. J. P.
Milky Juice of Lactuca Elongata. Mühl. Proc. A. Ph. A. (A. J. P., 1869.)

1869—

Gleanings from the German Journals (four articles). A. J. P.
On some Panama Drugs. A. J. P.
On the Nomenclature and Definitions of the United States Pharmacopœia. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*
Lycopodium Clavatum. Proc. A. Ph. A. (A. J. P., 1870.)
Preparations from Lactuca Canadensis Lin. Proc. A. Ph. A.

1870—

On the Weeds of the Western Peppermint Plantations. A. J. P.
Gleanings from the German Journals (three articles). A. J. P.
On Pharmaceutical Legislation. A. J. P.
Solubility of Glue in Glycerin. A. J. P.

1871—

Decomposition of Acetate of Morphia in Aqueous Solutions. A. J. P.
Detection of Turmeric in Powdered Rhubarb and Mustard. A.J.P.
Ferrated Elixir of Cinchona. A. J. P.
Gleanings from Foreign Journals. A. J. P.
Gleanings from German Journals (four articles). A. J. P.
Fluid Extract of Chestnut Leaves. A. J. P.
Note on Amylo-Nitrous Ether. A. J. P.
Note on Hydrocyanate of Morphia. A. J. P.
Note on some Pill Masses. A. J. P.

Precipitation of Quinia by Iodide of Potassium. A. J. P.
Seeds of two Species of Strychnos. A. J. P.
Solutions of Alkaloids in Medicated Waters. A. J. P.
Syrupus Asafœtida. A. J. P.
African Saffron. Proc. A. Ph. A. (A. J. P., 1872.)

1872—

Gleanings from the European Journals (twelve articles). A. J. P.
Loss of the Herbaceous Parts of Plants in Drying. A. J. P.
Monobromated Camphor. A. J. P.
On an Asserted Specific for Ague. A. J. P.
On some Pectoral Powders of European Pharmacy. A. J. P.
On the Botanical Origin of the Root of Cypripedium. A. J. P.
Pharmacognostical Notes. A. J. P.
Use of Petroleum Benzine in making Oleoresins. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*
Report of the Superintendent of the Laboratory. P. C. P. *Alumni Report.*
Chinese Blistering Bugs. Proc. A. Ph. A.
Sneezeweed. Proc. A. Ph. A.

1873—

Chloride of Mercurethyl. A. J. P.
Impurities among Rhizomes of Cypripedium. A. J. P.
Levico Mineral Water. A. J. P.
Gleanings from European Journals (twelve articles). A. J. P.
Medicinal Use of Green Soap. A. J. P.
Remarks on Elixirs. A. J. P.
Selected Formulas from the Pharm. Germ. (five articles). A. J. P.
Spirit of Nitrous Ether as a Supposed Test for some Alkaloids. A. J. P.
Assay of Preparations of Cantharides. Proc. A. Ph. A.
Reaction of Chloral Hydrate. Proc. A. Ph. A.
Time of Collecting Biennial Plants. Proc. A. Ph. A.

1874—

Balsams, Liquidambar Styraciflua and Orientale. A. J. P.
Gleanings from European Journals (nine articles). A. J. P.
Notes on some North American Plants. A. J. P.
Occurrence of Arbutin in some Ericaceous Plants. A. J. P.
Pharmacognostical and Chemical Notes. A. J. P.

Remarks on Resin of Podophyllum. A. J. P.
Introductory Address. P. C. P. *Alumni Report.*

1875—
Constituents and Properties of Potentilla. A. J. P.
Gleanings from European Journals (nine articles). A. J. P.
Medicated Waters. A. J. P.
Note on Tinctura Opii Muriatica. A. J. P.
Remarks on Cinchoquinine. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*
Matico. Proc. A. Ph. A.

1876—
Asserted Presence of Tannin in Gentian. A. J. P.
Fucus Vesiculosus and Some Allied Species. A. J. P.
Gleanings from the Foreign Journals (eleven articles). A. J. P.
Notes on the Genus Teucrium. A. J. P.
Notes on the International Exhibition (four articles). A. J. P.
Notes on the Quinine Flower. A. J. P.
Remarks on Cinchoquinine. A. J. P.
Remarks on Extract of Jalap. A. J. P.
Use of Metrical Weights in Prescriptions. A. J. P.

1877—
Detection of Castor Oil in Copaiba. A. J. P.
Examination of a Cure for Love of Liquor. A. J. P.
Formulas and Preparations of New Medicaments (three articles). A. J. P.
Gleanings from Foreign Journals (eight articles). A. J. P.
Note on Dialysed Iron. A. J. P.
Note on Xanthium Spinosum. A. J. P.
Note on the Permanent Exhibition. A. J. P.
The Metrical System in Prescriptions. A. J. P.
The Strength of Tinctura Opii. A. J. P.
Introductory Address. P. C. P. *Alumni Report.*

1878—
Aspidium Marginale. A. J. P.
Berberis of the Pacific Coast. A. J. P.
Gleanings from Foreign Journals (six articles). A. J. P.
Notes on a few American Drugs. A. J. P.
Useful Species of Viburnum. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*

1879—
Artificial Fruit Essences. A. J. P.
Poisonous Species of Astragalus. A. J. P.
Sulphocarbolate of Potassium. A. J. P.
Supposed Alkaloids of Podophyllum. A. J. P.
1880—
Note on Some American Species of Artemesia. A. J. P.
Presence of Tannin in Gentian. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*
1881—
Compound Spirit of Cinnamon. A. J. P.
Dose of Extractum Physostigmatis. A. J. P.
Georgia Bark. A. J. P.
Manufacture of Quinia in the United States. A. J. P.
Oleum Betula Empyreumaticum. A. J. P.
Gleanings in Materia Medica (four articles). A. J. P.
Origin of False Senega. A. J. P.
Orthography of the Metric Units. A. J. P.
Poisonous Principle of Anacardium. A. J. P.
Practical Notes from Foreign Journals (four articles). A. J. P.
Stearopten of Buchu Leaves. A. J. P.
Tinctura Rusci. A. J. P.
Xanthorrhœa Resins. A. J. P.
Introductory Address. P. C. P. *Alumni Report.*
1882—
Gleanings in Materia Medica (ten articles). A. J. P.
Practical Notes from Various Sources (ten articles). A. J. P.
Preparation of Mercurial Ointment. A. J. P.
Syrupus Ferri Protochloridi. A. J. P.
Chia and Allied Species of Salvia. A. J. P.
Useful American Myrtles. A. J. P.
Introductory Address. P. C. P. *Alumni Report.*
1883—
Comparison of Galenical Preparations (six articles). A. J. P.
Galenical Preparations of the German Pharmacopœia (four articles). A. J. P.
Practical Notes from Various Sources (six articles). A. J. P.
Relative Strength of Certain Preparations. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*

1884—

Chemical and Pharmacognostical Notes. A. J. P.

Laboratory Notes—Abstracts from Theses (two articles). A. J. P.

Notes on Researches on Capillarity. A. J. P.

Practical Notes. A. J. P.

1885—

Gleanings in Materia Medica (eight articles). A. J. P.

Materia Medica of the Mexican Pharmacopœia (eight articles). A. J. P.

Pharmaceutical Preparations of the Mexican Pharmacopœia (four articles). A. J. P.

Practical Notes (two articles). A. J. P.

Commercial Spanish Saffron. A. J. P.

Indigenous Species of Croton. A. J. P.

Useful Plants of the Verbenaceæ. A. J. P.

Introductory Address. P. C. P. *Alumni Report.*

Purity of Commercial Spanish Saffron. Proc. A. Ph. A.

1886—

Commercial Sulphate of Quinia. A. J. P.

Gleanings in Materia Medica (six articles). A. J. P.

Materia Medica of the New Mexican Pharmacopœia (four articles). A. J. P.

Note on Yerba and Raiz del Indio. A. J. P.

Valedictory Address. P. C. P. *Alumni Report.*

Report on Legislation. Proc. A. Ph. A.

Gotthilf Heinrich Ernst Mühlenberg as a Botanist. Hoffman's Phar. Rund.

1887—

Chemical Notes from Theses. A. J. P.

Gleanings in Materia Medica (six articles). A. J. P.

Jalap Resin and Jalapin. A. J. P.

Practical Notes from Various Sources (six articles). A. J. P.

Remarks on a Cancer Cure. A. J. P.

1888—

Blue Coloring Matter in Flowers. A. J. P.

Gleanings in Materia Medica. A. J. P.

Notes on Some New Remedies. A. J. P.

Practical Notes from Foreign Journals. A. J. P.

Notes on Some Old Remedies. A. J. P.

The Genus Luffa. A. J. P.

1889—
Note on Andromedotoxin in Ericaceæ. A. J. P.
Note on Filicic Acid. A. J. P.
Note on Use of Magnolia Leaves. A. J. P.
Notes on Some Indigenous Remedies. A. J. P.
On Soluble Gum Tragacanth. A. J. P.
Origin of False Senega Root. A. J. P.
Preparations of Mustard for Internal Use. A. J. P.
Useful Plants of the Genus Psoralea. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*

1890—
Botanical Origin of Some Pharmacopœial Drugs. A. J. P.
Gleanings in Materia Medica (two articles). A. J. P.
Morphine Salts and Hydrocyanic Acid. A. J. P.
Notes on Scopola. A. J. P.
Pharmacopœial Assays of Drugs and Galenicals. A. J. P.
Plant Groups and their Constituents and Properties. A. J. P.
Practical Notes from Various Sources (two articles). A. J. P.
Prospective Camphor Industry of Florida. A. J. P.
Some North American Medicinal Plants. A. J. P.

1891—
Galenical Preparations Added to the British Pharmacopœia. A. J. P.
Some North American Medicinal Plants. A. J. P.
Vegetable Drugs Used in Mexico (two articles). A. J. P.
Introductory Address. P. C. P. *Alumni Report.*

1892—
Polygala Alba. A. J. P.
Soda Mint. A. J. P.
Vanilla Plant an Epiphyte. A. J. P.
Valedictory Address. P. C. P. *Alumni Report.*

1893—
On the Tubers of Dioscorea Species. A. J. P.

A LIST OF HONORARY, ASSOCIATE AND CORRESPONDING MEMBERSHIPS TO WHICH PROFESSOR MAISCH HAD BEEN ELECTED.

(Copied from a list that had been made out by himself.)

Associate member of the Société Pharmacie Royale de Bruxelles, 1867.

Honorary member of the Pharmaceutical Society of St. Petersburg, 1868.

Corresponding member of the Société de Pharmacie d'Anvers, 1870.

Honorary member of the New Jersey State Pharmaceutical Association, 1871.

Honorary member of the California State Pharmaceutical Association, 1871.

Honorary member of the Massachusetts College of Pharmacy, 1871.

Honorary member of the British Pharmaceutical Conference, 1872.

Honorary member of the Ontario College of Pharmacy, 1873.

Honorary member of the Cincinnati College of Pharmacy, 1873.

Honorary member of the St. Clair Pharmaceutical Society of Southern Illinois, 1874.

Honorary member of the Camden Pharmaceutical Association, 1874.

Corresponding member of the Société Royale des Sciences Médicales et Naturelles, Bruxelles, 1874.

Corresponding member of the Académie Royale de Médecin de Belgique, 1874.

Honorary member of the New Hampshire State Pharmaceutical Association, 1875.

Honorary member of the Société Royale de Pharmacie de Bruxelles, 1876.

Corresponding member of the Académie Royale de Médecin de Bruxelles, 1876.

Corresponding member of the Sociedad Mexicana de Historia Natural, 1876.

Corresponding member of the Sociedad Mexico Pharmaceutica-Medica de Yucatan, 1878.

Honorary member of the Neu Yorker Apotheker Verein, 1878.

Honorary member of the Pharmaceutical Association of South Carolina, 1878.

Honorary member of the Pharmaceutical Society of Victoria, 1878.

Honorary member of the Schweizerische Apotheker Verein, 1878.

Honorary member of the Zeta Phi Alpha, P. C. P., 1879.

Honorary member of the Pharmaceutical Society of New South Wales, 1880.

Corresponding member of the Wetterauische Gesellschaft der Gesammten Naturheilkunde, 1881.

Honorary member of the Louisiana State Pharmaceutical Association, 1882.

Honorary member of the Alabama State Pharmaceutical Association, 1882.

Honorary member of the Ohio State Pharmaceutical Association, 1882.

Honorary member of the New York State Pharmaceutical Association, 1882.

Honorary member of the Wisconsin State Pharmaceutical Association, 1882.

Honorary member of the Iowa State Pharmaceutical Association, 1883.

Honorary member of the Virginia State Pharmaceutical Association, 1883.

Honorary member of the Pharmaceutical Association of the Province of Quebec, 1885.

Honorary member of the Société de Pharmacie d'Anvers, 1885.

Honorary member of the Maryland State Pharmaceutical Association, 1886.

Honorary member of the Pharmaceutical Society of Great Britain, 1887.

Honorary member of the Nebraska State Pharmaceutical Association, 1887.

Honorary member of the Alumni Association of the Philadelphia College of Pharmacy, 1888.

Honorary member of the Georgia State Pharmaceutical Association, 1890.

Honorary member of the Trinity Historical Society of Dallas, Tex., 1891.

Honorary member of the Philadelphia Botanical Club, 1892.

Honorary member of the Colorado State Pharmaceutical Association, 1892.

Honorary member of the Association Internationale pour le Progrès de l'Hygiene, Bruxelles, 1893.

THE HONORARY DEGREES CONFERRED ON PROFESSOR MAISCH WERE:

Degree of Graduate in Pharmacy, by the Maryland College of Pharmacy, 1871.

Degree of Doctor in Pharmacy, Maryland College of Pharmacy, 1871.

Degree of Master of Pharmacy, by the Philadelphia College of Pharmacy, 1889.

TINCTURE OF KINO.[1]

By George M. Beringer.

Although kino is recognized as a valuable astringent medicine, the tendency of the tincture to gelatinize and become immiscible and inert, has proven such an objection that in many localities the use of this preparation is being discouraged.

Various investigators have attributed this gelatinization to different constituents. The earlier writers claimed that it was due to insoluble extractive, the apothème of Berzelius. Subsequently, this tendency was ascribed to pectin or pectic acid. Mr. Redmond (American Journal of Pharmacy, XIV, folio 259) concluded from his experiments that neither pectin nor pectic acid were present in the gelatinous mass and he considered the change due to the formation of "ulmic acid" or "humus." More recently, Mr. J. H. Maiden (American Journal of Pharmacy, 1889, folio 633) states that he could not detect gum or pectin in the gelatinized mass and writes that he "has little doubt that this gelatinous-looking mass consists wholly or mainly of phlobaphene." By direct experiments he has shown "that insoluble phlobaphenes break down after a longer or shorter period of digestion in alcohol and form a substance already likened to red currant jelly."

A number of formulas for tincture of kino have been published at various times claiming to obviate this trouble, and to attain the same purpose the official formula has been changed in the various revisions of the Pharmacopœia. These official changes have been in the direction of increasing the alcoholic strength of the menstruum and the introduction of glycerin to the extent of 15 per cent. by weight in the 1880 edition, increased in the 1890 revision to 15 per

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[1] Presented at the annual meeting of the Pennsylvania Pharmaceutical Association, June, 1903.

cent. by volume. In the writer's opinion, changes in neither of these directions were desirable, and the present official formula has not in my experience been satisfactory, and from the fact that this year queries are again presented to both the Pennsylvania and the New Jersey Pharmaceutical Associations "requesting a formula for tincture of kino that will keep," I presume that the experience of other pharmacists is in harmony with my own.

A very serious and practical objection to the use of glycerin, at least to the extent officially directed, is the fact that it makes filtration exceedingly slow, greatly protracting the exposure and thus inducing the very changes that cause gelatinization.

One operation by a clerk who prepared 200 c.c. of the tincture adhering closely to the official process, required several weeks to complete. Better results were obtained by adding the glycerin to the filtered alcoholic tincture instead of using in the menstruum.

Displacement has been highly recommended in the preparation of this tincture, but in my hands was not satisfactory. An attempt to prepare 200 c.c., using equal bulk of sand to powder and distribute the kino and using the official menstruum (1890), required nearly six weeks to complete.

The use of 15 grammes of sugar to distribute the kino and replace the glycerin in 100 c.c. of tincture was tried and shortened the time of percolation decidedly. Other experiments tried consisted in the addition of potassa and of ammonia.

But the addition of all such extraneous substances was considered undesirable and the same may be said of the suggestions in some of the published papers to add magnesium carbonate, catechu, logwood, etc. After experimenting practically for more than a decade with the various suggestions as to additions and menstruums, I have obtained the most satisfactory results with the following formula:

Take of

Kino	100 grammes.
Diluted alcohol, sufficient quantity to make	1,000 c.c.

Rub the kino in a mortar with 250 c.c. of diluted alcohol previously warmed to 50° C. When saturated decant the solution and repeat with successive portions of warm diluted alcohol until 1,000 c.c. of the mixed solution is obtained. Filter and wash the filter and dregs with sufficient diluted alcohol to obtain 1,000 c.c. of finished

tincture. This should be bottled in small well-corked vials holding from 60 to 120 c.c. and kept in a cool, *dark* place.

I have sometimes modified the manipulation by warming the diluted alcohol in a well-tinned can (an ether can will answer) and adding the powdered kino and agitating occasionally for a few days while standing in a warm place, then filtering and making up to bulk by washing the filter with diluted alcohol. However, in following such a method of manipulation care must be taken to see that the can is thoroughly tinned, as any exposed iron surface will blacken and spoil the product.

I desire to call attention to the following points necessary to be observed in order to obtain a satisfactory preparation of kino:

(1) The kino selected should be fresh and have a bright transparent garnet-colored fracture and should be almost entirely soluble in alcohol, and give with cold water a deep red-colored solution and only a moderate amount of insoluble residue. Mr. J. H. Maiden (AMERICAN JOURNAL OF PHARMACY, 1889, fol. 633) fixed the qualifications for Australian kino necessary to obtain a satisfactory tincture as follows: "If kino is not completely and readily soluble in cold water, forming a clear ruby solution, with no gelatinous ruby-colored residue of phlobaphene, it should be rejected." This qualification will apply with but slight modification to the official or Indian kino.

In regard to the solubility of kino, I must note an error in the present Pharmacopœia in the statement that kino is "only slightly soluble in cold water." As this is an East Indian product, the following statement from the Pharmacographia Indica (Vol. I, fol. 465) is taken as authority: "The greater part of it is soluble in cold water, and all in boiling water, but a portion is deposited on the water cooling." The Pharmacographia of Flückiger and Hanbury, page 196, states: "In cold water they (pieces of kino) sink, but partially dissolve by agitation, forming a solution of very astringent taste and a pale flocky residue. The latter is taken up when the liquid is made to boil, and deposited on cooling in a more voluminous form." These statements are correct, and the forthcoming Pharmacopœia will no doubt correct this error in the U.S.P., 1890.

(2) Selection of Menstruum.—The writer is aware that in preferring the use of diluted alcohol for making tincture of kino, he has placed himself in opposition to some of the heretofore accepted

authorities, as, for example, the National Dispensatory, in which occurs the following unqualified statement: "Made with alcohol and properly preserved, it will remain limpid, but if made with diluted alcohol it will gradually lose its astringency and become gelatinous."

However, a critical review of some of the previously published papers and notes convinces me that the favorable results reported for some of these formulas was largely due to the diluted alcohol recommended as the menstruum. Although the proposers attributed the success to other causes, a number of sign boards point toward the menstruum.

The use of strong alcohol was probably advocated on the theory that pectin was supposed to be an ingredient of kino and the cause of the gelatinization. Regarding this theory, Mr. Redwood (AMERICAN JOURNAL OF PHARMACY, Vol. XIV, folio 259) writes: "On the presumption, therefore, that the gelatinization of this tincture depends on the presence of pectin, rectified spirit has been used in its preparation instead of proof spirit, with the view of obviating this result, pectin being insoluble in rectified spirit. This substitution, however, has not been found to effect the intended object, as the tincture prepared with rectified spirit is subject to the same change as that made with proof spirit." And then this author, at that time already blazoned the path for a more satisfactory preparation in the following sentence: "The most effectual means of preventing this change would probably be in preparing the tincture, to extract as speedily as possible the most soluble part of the kino, without allowing the solution thus formed to remain long in contact with the altered and less soluble constituents."

In a letter to the editor of the AMERICAN JOURNAL OF PHARMACY (AMERICAN JOURNAL OF PHARMACY, Vol XXI, folio 297), Mr. Benjamin Canavan states "that by making the preparation with proof spirit, instead of rectified spirit, I obtained a tincture which keeps perfectly well, is more astringent and less stimulating than we have been before able to obtain it." This statement is subsequently confirmed by R. H. Stabler (AMERICAN JOURNAL OF PHARMACY, Vol. XXIII, folio 123).

L. Myers Connor (AMERICAN JOURNAL OF PHARMACY, 1873, folio 260) ascribes the permanency of his preparation to the use of magnesium carbonate, but it is to be noted that the menstruum used was diluted alcohol.

G. W. Kennedy (AMERICAN JOURNAL OF PHARMACY, 1880, folio 78) attributes the success of his formula to the addition of logwood, but it is to be noted that he likewise used diluted alcohol.

R. Rother (AMERICAN JOURNAL OF PHARMACY, 1886, folio 333) considers glycerin "as unsatisfactory as all other agents previously tried," and says "the addition of glycerin before or after the gelatinization had no visible effect either in preventing the alteration or regenerating the spoiled tincture." He proposes the use of Catechu as a preventive, but strangely attributes no value to the alcoholic weakness of his formula, which contains only four fluid ounces of alcohol in a pint.

The British Pharmacopœia directs twelve fluid ounces of rectified spirit in twenty fluid ounces of tincture of kino equivalent to about 50 per cent. alcohol in the finished tincture.

These various excerpts indicate that I am only digging out a half buried truth. The fact is that if proper gum kino is used, diluted alcohol will satisfactorily extract it, and is preferable to a stronger alcoholic menstruum because less stimulating.

(3) The proper preservation of the product. Not only should the tincture be divided into small well-stoppered vials, but they should be preserved in a cool place protected from the light. The effect of the sunlight in causing the change in this tincture is quite pronounced, yet the pharmacopœia fails to caution against such exposure, and the various papers examined also fail to direct attention to this cause of change, which is probably quite as potent as the atmospheric exposure. It has been my custom to keep only the one small vial in use in the prescription department, the remainder of the stock in small vials being stored in the dark in the cellar.

In concluding this paper I exhibit the following specimens: No. 1, a two-ounce bottle, that contained tincture of kino made January, 1899, which was gradually used up leaving only a few drops. This bottle has since been preserved intact to note if a change would take place. No. 2, a four-ounce bottle that contained some tincture made June, 1900. On June 10, 1902, this had been all used up but about 2 c.c., and was set aside for preservation. Under this unfavorable condition the tincture shows no signs of gelatinizing. No. 3, a full four-ounce vial of the same lot of tincture, made June, 1900, shows no precipitation or tendency to thicken.

NOTE ON THE ASSAY OF FERROUS CARBONATE PREPARATIONS.[1]

By Frank X. Moerk.

In recently assaying some samples of pill-mass and pills of ferrous carbonate results were obtained which show that it is impossible to determine accurately the quantity of ferrous carbonate in presence of organic excipients. Some of the results obtained are given in the following table:

	Ia.	Ib.	II.	III.
Pills (293)	0·72 gr.	0·66 gr.	—	0·54 gr.
" (517)	0·60 gr.	—	0·644 gr.	0·525 gr.
Pill Mass	35·78 p. c.	—	38·10 p. c.	32·80 p. c.

I*a*. Three pills, or about 1 gramme of the pill-mass, were heated with 10 c.c. diluted sulphuric acid and 50 c.c. distilled water in a current of carbon dioxide to prevent oxidation of the ferrous salt; after complete disintegration resulted, the mixture was cooled and titrated with deci-normal Potassium Bichromate V. S. and results expressed in grains per pill, or per cent. in case of the mass of ferrous carbonate.

I*b*. Carried out as under I*a*, with the exception that about 90 per cent. of the volumetric solution required in I*a* was added at once and then the titration completed by the careful addition of the volumetric solution.

II. *To Determine Total Iron.*—The same quantities as above were boiled for fifteen minutes with 10 c.c. hydrochloric acid and 50 c.c. water; after cooling, 10 c.c. stannous chloride solution (5 per cent.) were added (to reduce ferric to ferrous salt), the excess of stannous chloride oxidized to stannic chloride by the addition of 20 c.c. mercuric chloride solution (5 per cent.) and the mixture titrated with deci-normal Potassium Bichromate V. S.; the results were expressed as above. The results being higher than in I were at first interpreted as showing the presence of ferric compounds.

III. To obtain a check on II, the same quantities were carefully ignited in *porcelain* dishes until free from carbon, allowed to cool and then heated with 10 c.c. hydrochloric acid with the occasional addition of a few drops of stannous chloride solution until the ash was perfectly dissolved and a colorless solution produced (a yellow

[1] Read at the annual meeting of the Pennsylvania Pharmaceutical Association, June 1903.

color indicates ferric salt, which is easily reduced by the addition of stannous chloride); dilute with 50–75 c. c. water, add 10 c. c. mercuric chloride solution (5 per cent.) and titrate with potassium bichromate; calculate results as before.

The results obtained in III, which gives the total iron contents as ferrous carbonate, being the lowest of the several determinations, clearly prove the statement made in the beginning of this paper. Methods I and II give too high results, due to the action of the organic matter upon the volumetric reagent. Method III, while giving the quantity of ferrous carbonate originally present, cannot give the amount actually present at the time of the assay, although under no condition could the quantity found in III be exceeded, as I and II would indicate.

Attention is directed to a source of difficulty which may be experienced in titrating ferrous salts with potassium bichromate. In preparing a fresh solution of potassium ferricyanide for use as an indicator, the crystal should be washed several times with small quantities of distilled water until these washings give *only a brownish color* with a pure ferric salt, before making the solution; this is necessary to remove potassium ferrocyanide, which is produced by exposure of the ferricyanide to light and air.

BASHAM'S MIXTURE.[1]

By Joseph W. England.

In this section of the country, at least, there is probably no more popular ferruginous diuretic than the well-known solution of iron and ammonium acetate, or Basham's Mixture. As a matter of history, it is interesting to note that the preparation originated with Dr. William Richard Basham, of London, who, I am informed, on the authority of Dr. William Murrell, the well-known therapeutist of London, was a physician to the Westminster Hospital from 1843 to 1877. "In the latter year," writes Dr. Murrell, "he was seized with apoplexy while in the hospital, and died a few months later. He rarely contributed to medical literature, but, I think, wrote a book on 'Diseases of the Kidneys.' There is a portrait of him in the board room of the hospital."

[1] Read at the meeting of the Pennsylvania Pharmaceutical Association, June, 1903, and communicated by the author.

The work that Dr. Murrell refers to is doubtless Dr. Basham's book on "Dropsy," the 1866 edition of which is to be found in the Medical Library of the Philadelphia Hospital. On page 218 the following statements are made:

"The preparations of iron in the Pharmacopœia are numerous, but there is one which, in cases of renal dropsy, stands pre-eminent for its efficacy and should be preferred before all others. It is the tincture of the sesquichloride (of iron). But it is not as a sesquichloride that its efficacy is most perceived. It is as an ammonio-chloride kept in solution by acetic acid that its beneficial influence becomes most apparent. It is a very simple preparation; a few drops of the tincture, according to the age of the patient, are added to a drachm of the liquor ammonii acetatis previously acidulated with acetic acid."

By "a few drops of the tincture" Dr. Basham evidently meant a small dose, or 5 to 10 minims, as may be inferred from the following statement on page 193:

"In cases of renal dropsy, no preparation answers as well as the tincture of the sesquichloride (of iron). Small doses are better than large, and 5 or 10 minims three times a day will answer all the purposes designed in its administration."

It will be observed that Basham gave no specific formula for the mixture bearing his name, and it may be possible that the working formula was originated by someone else. I have searched a number of English pharmaceutical books and journals published prior to 1876 for formulas of Basham's Mixture, but have searched in vain. A few years ago Peter MacEwan, while editor of the *Chemist and Druggist*, of London, wrote me that Basham's Mixture was not much used in Great Britain.

The first formula given for Basham's Mixture in an American pharmaceutical journal appears to have been published in the AMERICAN JOURNAL OF PHARMACY for March, 1876, and was reprinted from the "Pharmacopœia of the Philadelphia Hospital" being named "Mistura Ferri Chloridi Composita" (Basham's Mixture). As the first portion of this little formulary was printed in the February issue of the JOURNAL, and as the city appropriations to the Board of Guardians of the Poor (the then governing body of the Philadelphia Hospital) were scarcely available for use so early in the year, it is reasonably sure that the formula must have been employed at the Hospital in 1875 or earlier.

The following is the formula:

Tr. ferric chloride	2½ f℥
Ac. acetic dilute	1 f℥
Sol. ammon. acetate	3 f℥
Curaçoa or alcohol	2 f℥
Syrup,	
Water, of each, to measure	6 f℥

This formula was superseded by one in which the quantity of the tincture of iron was slightly reduced and the acetic acid increased. It was as follows:

Tr. ferric chloride	2 f℥	160 m.
Ac. acetic dilute	2 f℥	4 f℥
Sol. ammon. acetate	3 f℥	4 f℥
Elixir orange	6 f℥	1 f℥
Glycerin	6 f℥	1 f℥
Water sufficient to measure	6 f℥	8 f℥

It should be stated that at a pharmaceutical meeting of the Philadelphia College of Pharmacy, held January 18, 1876 (AMER. JOUR. PHARM., 1876, 90), reference was made by James T. Shinn to the fact that there were differences in Basham's Mixture as obtained from different sources, the statement being made that 20 minims of the tincture of chloride of iron and 1 fluidounce of solution of ammonium acetate were the right proportions, but no other ingredients or working formula were given.

In May, 1877, Thomas S. Wiegand (AMER. JOUR. PHARM., 1877, 232), reported the following formula:

	Parts.
Tr. ferric chloride	3
Ac. acetic dilute	4
Sol. ammon. acetate	32
Curaçoa cordial	8
Syr. orange peel	12
Water to make	64

By "parts," Mr. Wiegand tells me that he meant "fluid parts," or, for example, fluid drachms. He states that he first learned of this formula through the late Charles Bullock, who, he thought, had copied it from an English journal.

This is quite similar to the Philadelphia Hospital formula, and likewise to that used in the '70's by the late Dr. Philip Leidy, a leading Philadelphia practitioner some years ago, and one time chief resident physician of the Insane Department of the Philadelphia

Hospital, by whom it was given to Edwin M. Boring, of Philadelphia. It is as follows:

Tr. ferric chloride	3 f℥
Ac. acetic diluted	4 f℥
Sol. ammon. acetate	3½ f℥
Curaçoa cordial	1 f℥
Syrup	1 f℥
Water sufficient to measure	8 f℥

Basham's Mixture was first officially recognized by the U.S. Pharmacopoeia 1880, under the name of "Mistura Ferri et Ammonii Acetatis," and the following was the equivalent formula of the "parts-by-weight" formula:

Tr. ferric chloride	83 m.
Ac. acetic diluted	2 f℥
Sol. ammon. acetate	14 f℥
Elixir orange	6 f℥
Syrup	1 f℥
Water sufficient to measure	8 f℥

In the 1890 U.S.Pharmacopoeia the title was changed to "Liquor Ferri et Ammonii Acetatis," and the equivalent formula of the metric formula given is:

Tr. ferric chloride	77 m.
Ac. acetic diluted	115 m.
Sol. ammon. acetate	12·8 f℥
Aromatic elixir	6·4 f℥
Glycerin	7·68 f℥
Water sufficient to measure	8 f℥

These formulas have been given at some length for the purpose of showing the radical departure of the Pharmacopoeia from the formulas originally used and upon which the reputation of the preparation was first established. Practically the older formulas represented in each dessertspoonful of the mixture, 5 minims of tincture of iron and 60 minims of solution of ammonium acetate; the official formula represents, in the same quantity, but 2½ minims of tincture of iron and 24 minims of solution of ammonium acetate.

As the usual dose of Basham's Mixture is from a dessertspoonful to a tablespoonful, and as the usual dose of tincture of iron is from 5 to 10 minims, and of solution of ammonium acetate from 1 to 2 fluidrachms or more, the usual dose of the mixture should represent the usual doses of tincture and solution, especially as the iron salt used is chemically changed from a stronger into a weaker

(therapeutically) compound. From this the absurd weakness of the U.S.P. product may be seen. In an attempt to secure pharmaceutical elegance and permanency of product, therapeutical efficiency has been sacrificed or largely nullified. And this attempt has been as unnecessary as it was ill-judged, because by proper procedure the preparation can be made both attractive and permanent for months. The most necessary factor is simply to see that the solution of ammonium acetate used is neutral, or, better, faintly acid in reaction, and the acidity should not be that of the freed carbonic acid gas, but of the free acetic acid. Unless the gas be first eliminated before testing, litmus paper is of no value in showing acetic acidity. Practically, the best guide in obtaining neutrality or faint acidity is the sense of taste.

There are reasons for believing that the weakness of the official product has given weak therapeutic results, and that this has lessened the use of the mixture and prevented general growth in its favor especially in the Western States, where the older formula is not widely known and the official one is followed.

The chemistry of Basham's Mixture is interesting. The iron present is in the form of an acetate, and there is also formed, as one of the products of decomposition, a certain amount of ammonium chloride, the larger proportion of ammonium acetate remaining unchanged. The reaction is as follows:

$$\underset{324}{Fe_2Cl_6} + \underset{462}{6NH_4C_2H_3O_2} = \underset{466}{Fe_2(C_2H_3O_2)_6} + \underset{320}{6NH_4Cl}$$

Calculations will show that in the 38½ minims of the official solution of ferric chloride (s. g. 1·387; 37·8 per cent. anhydrous salt) used for 1 pint of the official "Liquor Ferri et Ammonii Acetatis" there are about 20 grains of ferric chloride represented, and that this requires 28 grains of ammonium acetate to decompose, yielding 28 grains of ferric acetate and 20 grains of ammonium chloride; the amount of ammonium acetate remaining undecomposed is about 80 grains. In other words, each dessertspoonful dose of the official Basham's Mixture contains about ½ grain of ferric acetate, ⅓ grain of ammonium chloride and 1¼ grains of ammonium acetate, quantities entirely too small to be of much therapeutic value. The older formulas represented, practically, twice as much iron and two-and-a-half times as much ammonium acetate.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

TESTS AND REAGENTS, chemical and microscopical, known by their authors' names, together with an index of subjects, compiled for the use of chemists, microscopists, pharmacists, students, etc. By Alfred I. Cohn. New York: John Wiley & Sons. London: Chapman & Hall, Limited.

This book is in the nature of a compilation from a great number of sources (the small brochures of Altschul, Schneider, and Wilder having served as a nucleus), and, with very numerous additions, was published in a series of monthly installments in *Merck's Report*, from March, 1900, to September, 1902; it is here republished by the kind permission of Messrs. Merck & Co. Since its first appearance in serial form, however, the matter has been further greatly amplified.

The compilation has been made with a view to supplying the busy chemist, microscopist, and pharmacist with data which are frequently desired, but which are often either not at hand, or inaccessible. The names of authors are given alphabetically, with numerous cross-references. The methods are concise and unusually free from ambiguity. The index of subjects at the end serves to make the book useful to the investigator who wishes to make a test for a particular substance, the reagents of which may not be known to him, or may be forgotten for the time. The book serves another useful purpose, and that is to make all more cautious of speaking, for instance, of von Jaksch's test, or Schultze's reagent, as there are at least a half-dozen tests or reagents known by these names. It is necessary to specify not only the name of the test, but the uses to which it is applied, as "von Jaksch's test for sugar in urine," distinguishing it from "von Jaksch's test for uric acid," or "Schultze's test for cellulose," distinguishing it from "Schultze's macerating mixture," etc. The book will be found to be very valuable to the pharmacist and physician, as well as chemist and biologist.

A TEXT-BOOK OF VOLUMETRIC ANALYSIS, with special reference to the volumetric processes of the Pharmacopœia of the United States. By Henry W. Schimpf. With sixty illustrations. Fourth edition. New York: John Wiley & Sons. London: Chapman & Hall, Ltd.

It is always a pleasure to have in hand a book which is written with a special object and the author of which expects to reach a certain

circle. Professor Schimpf's book was designed for the use of pharmacists and pharmaceutical students and that is one of the reasons why it has been so successful. The present edition differs materially from the preceding in that the volumetric analysis of the alkaloidal drugs are considered at even greater length than heretofore. Among the newly added subjects are included the following: Gordin and Prescott's Method with Wagner's Reagent; Gordin's Modified Alkalimetric Method; Kebler's General Method of Extracting Alkaloids from Drugs; A. B. Lyons' Methods for the Assay of Vegetable Drugs. Assay of Galenical Preparations, Methods of Lloyd, Katz, Kippenberger, and Farr and Wright.

Detailed methods from various sources are given for the assay of aconite, belladonna, cinchona, coca, colchicum, hyoscyamus, ipecac, nux vomica, opium, strophanthus, stramonium, tobacco, wild-cherry bark, commercial acetate of lime, and boric acid.

One of the valuable features of the book is the numerous references to original literature. The value of the book would be enhanced with a few more cross-references to authors of methods.

For those of our readers who may not be familiar with the book it should be stated that the general principles underlying volumetric analysis are considered, together with the kinds of apparatus to be employed as well as their use. There are also considered the following subjects: Indicators, calculating results, analyses by neutralization, analyses by precipitation, oxidimetry, analysis by indirect oxidation, estimation of substances readily reduced, the examination and estimation of acetic acid and acetates, etc., as well as the sanitary analyses and volumetric analysis of various organic substances, as water, milk, butter, air, soap, sugars, pepsin, peptone, malt preparations, urine, volumetric assaying of vegetable drugs, assay of galenical preparations, etc.

The book is convenient in form as well as well written, and will prove valuable to the progressive pharmacist.

THE PRAXIS OF URINARY ANALYSIS. A guide to the chemical analysis of urine. With directions for preparing artificial pathological urines for practising the various tests, and an appendix on the analysis of stomach contents. By Lassar-Cohn. Authorized translation from the author's enlarged and revised second edition

by H. W. F. Lorenz. New York: John Wiley & Sons. London: Chapman & Hall, Limited.

In this well-known work of Lassar-Cohn the author confines himself to the chemical determination of those constituents of urine and stomach contents, the results of which will prove valuable in diagnosis. The title of the book is unfortunately, however, misleading, as the work contains more than the title indicates. The following is an enumeration of the contents:

Part I. Urinary analysis. (*a*) Qualitative tests for the detection of albumen, sugar, acetone, acetoacetic acid, bile-pigment, urobilin, blood-pigment, indican, sulphuric acid, ester-sulphuric acids, chlorine, phosphates in urine, and ammonia in urine. (*b*) Quantitative methods. Quantitave estimation of albumen, sugar, and total sulphuric acid and ester-sulphuric acids. (*c*) Normal urine.

Part II. Analysis of stomach contents: Detection of hydrochloric acid, lactic and volatile acids, test for absence of pepsin, alphabetical list of all the reagents required, reagents used in urinary analysis, reagents and apparatus for the quantitative, etc., estimation of constituents of urine, and reagents used in the analysis of stomach contents.

The book is original and written with clearness and directness, and will no doubt have a success equal to that of the German edition.

PENNSYLVANIA PHARMACEUTICAL ASSOCIATION.[1]

The twenty-sixth annual meeting was held at Eaglesmere, Sullivan County, Pa., June 23d to 25th. The Association convened on Tuesday evening with nearly 200 members in attendance, and the President, C. L. Hay, in the chair. The members were welcomed by Mr. Henry Clay, and J. H. Redsecker and M. N. Kline responded on behalf of the Association. The delegates from the various associations, including the Philadelphia College of Pharmacy, the Alumni Association of the P.C.P., the Philadelphia Association of Retail Druggists, the Western Pennsylvania Association of Retail Druggists

[1] Credit is due to Dr. J. A. Miller, Prof. C. B. Lowe and Dr. C. A. Weidemann for courtesies in the preparation of this report; in fact, the report of Dr. Weidemann, as chairman of the delegates of the Philadelphia College of Pharmacy, has been largely drawn upon for the facts presented.

and a large number of county associations, were cordially welcomed by the President on behalf of the Association, and the delegates responded with an earnestness and vigor that seemed to indicate a new life in the Association.

The President's address was a very able résumé of the conditions of the drug trade and contained a number of valuable suggestions which were subsequently adopted.

The Treasurer's report showed a balance of $807.03.

The Committee on Legislation made a very interesting report, giving in detail their efforts at preventing vicious legislation as well as supporting meritorious legislation.

The Committee on Trade Interests had been very active during the year. A large amount of work had been done, and as a result fifty-three county associations are now organized, including those previously organized; these include 2,200 druggists. All these county associations are affiliated with the N.A.R.D., and much stronger fraternal feeling exists now than ever before.

The N.A.R.D. received a cordial endorsement and an order was passed for the payment of the per capita assessment. The Association endorsed the resolutions referred to them by the New Jersey Pharmaceutical Association. The first called for a reduction by the Government of the internal revenue tax upon proof spirits; the second protested against the patenting of chemical products intended for use as medicines; the third requested that any of the new synthetic compounds introduced into the U.S.P. should be called by their chemical names, where practicable, or by names coined for the purpose.

The Association learned with pleasure of the appointment of their fellow-member, W. L. Cliffe, to the Pharmaceutical Examining Board.

The Committee on Botany had nothing to report, but asked "why Rhus Toxicodendron and other noxious plants should not be placed under ban of the law as Canada thistle is?"

The Executive Committee in their report alluded to the disposition of the Legislature to enact vicious legislation against pharmacists, and to the necessity of continued watchfulness on the part of pharmacists to prevent it. They also referred to the herculean efforts that had been put forth to increase the membership, whereby 426 new members had been obtained, which is 300 more than the

highest number ever joining at any former meeting, thus doubling the membership. The injustice of the patent laws in relation to medicines was discussed, and it was urged that appeals for readjustment of the same be made and that the pharmacists agitate the subject until relief is obtained.

During the year seven members died, two being ex-Presidents.

The Board of Pharmacy presented a report, stating that during the year 1,338 applicants had presented themselves for examination, of which number 705 had passed; 312 complaints had been received; many of the complaints appeared to be due to malice, many were not within the jurisdiction of the Board, and only ninety-five were of a serious nature and a number of these were unintentional violations. This is a much better condition than formerly existed.

The Committee on Papers and Queries had been active, and as a result the unusually large number of thirty-three papers was received; most of these were answers to the printed list of queries, the rest were volunteer papers. The papers read covered a variety of subjects and the discussions that followed were very instructive and interesting. The papers being so numerous and the business of the meeting so large, a number of the papers could only be read by title and referred for publication.

One of the most important things done was the election of five members, whose names are to be presented to the Governor, with the request that he select one to fill the next vacancy in the Board of Pharmacy. The following named members were elected: E. M. Boring, D. J. Thomas, C. N. Boyd, J. H. Stein, and W. F. Horn.

Cambridge Springs, Crawford County, was selected as the next place of meeting—the time, June 21–23, 1904.

The following officers were elected: W. O. Frailey, of Lancaster, President; L. L. Walton and B. E. Pritchard, Vice-Presidents; Dr. J. A. Miller, Secretary; Joseph L. Lemberger, Treasurer; Chas. Griffith, George A. Gorgas and Chas. Rehfuss, members of the Executive Committee; and F. E. Siggins, Local Secretary.

This twenty-sixth annual meeting of the Pennsylvania Pharmaceutical Association proved one of the most noted in its history, largely so because of the remarkable increase in its membership, also for the enthusiasm evident for continued efforts to still more increased membership, and the hearty fraternal spirit from all sections of the State was so marked as to lead to the thought that the

pharmacists throughout the State had realized the value of organization more than ever before, and had determined to make the Pennsylvania Pharmaceutical Association a stronger representative body than ever.

Of the papers presented at the meeting the following are published in full in this issue of this JOURNAL, or will appear in later issues: "Standard Sieves," by Jos. P. Remington; "Tincture of Kino," by George M. Beringer; "Note on the Assay of Ferrous Carbonate Preparations," by F. X. Moerk; "Basham's Mixture," by Jos. W. England; "Syrup of Calcium Lactophosphate," by Chas. H. LaWall; "Granular Effervescent Salts," by E. Fullerton Cook; "'Headache Powders' Prepared from Coal-Tar Derivatives," by Richard V. Mattison.

The remainder of the papers are abstracted as follows:

SYRUP FERROUS IODIDE.

By Wilbur F. Horn.

The author introduces the iron into a bottle or flask, adds 100 c.c. of distilled water, and without disturbing the flask adds the iodine. The vessel is surrounded with water and ice and set aside away from the light for at least two hours. The syrup is added to another bottle provided with a funnel with filter paper and containing a little metallic iron. The iodide-of-iron bottle is then shaken, heated if necessary, and the solution filtered into the syrup, the remainder of the distilled water being used, as also of syrup, to conform to the U.S.P.

The author still clings to the notion that the discoloration is due to free iodine.

TINCTURE OF KINO.

By Frederic E. Niece.

The author states that the following formula furnishes a preparation that is all that can be desired in keeping qualities: Kino, 4·5 ounces; alcohol, 25 ounces; water, 7 ounces; and glycerin, 13 ounces. Reduce the kino to a fine powder; add to it by mixing about 10 ounces of large, well-washed bird-gravel. Place this into a suitable wide-mouth vessel and add the alcohol and water previously mixed. Macerate for two weeks, occasionally stirring with a wooden implement, keeping the vessel well covered. Allow this

to stand two days, after two weeks of maceration, without agitation, and pour off the supernatant liquid, pass through a pleated filter; to the filtrate thus obtained add the glycerin by agitation. Fill a bottle with the entire amount, cork well, allow to stand a few days, then pour the tincture off carefully into 8-ounce bottles, which should be well filled and well corked with paraffined corks. Store in cool, dark place.

Extract and Fluid Extract of Ergot.

By J. Percy Remington.

The author calls attention to some of the precautions to be observed in making the most valuable medicinal preparations of ergot. He also calls attention to the fact that it has been suggested for the trial of physicians and pharmacists who are accustomed to make up a solution of the extract for hypodermic use, to enclose the solid extract in tinfoil capsules (60 grains each), so as to avoid the inconvenience of weighing it. One of these capsules, dissolved in 6 fluidrachms of sterilized water with 3 drops of chloroform added to preserve it, makes an aqueous solution of the same strength as the fluid extract, which is the strength generally employed for hypodermic use.

A Powder-Mixer and Percolator Support.

By H. F. Ruhl.

The author has devised a powder-mixer which is constructed on the principle of a butter-churn, which, by means of a crank, is made to revolve on its axis, thus turning end-over-end and causing the contents to become thoroughly mixed. He has also devised a support for a percolator which is intended for showing a pharmaceutical operation in the show window.

The Preparation of Fruit Syrups for the Fountain.

By Frederic E. Niece.

The author submits a formula for the preparation of the fresh stock syrup, which is then diluted with syrup for the fountain. The fruit is first thoroughly cleaned, then washed with warm water, cut, then reduced to a pulp by mashing under pressure in a large mortar.

This pulp is then placed into a spacious vessel and allowed to remain exposed in a warm place until it has completely undergone fermentation, being occasionally stirred to assist the process. The pulp thus obtained is placed into a folded cheese-cloth, allowed to drain, then expressed by pressure. To each quart of this juice add about ½ ounce of pure skimmed milk; allow to stand twenty-four hours, occasionally stirring it. After this it is gently warmed and passed through a double-pleated filter (first moistened with water) and returned several times until it comes through clear, using talcum if necessary. To each pound of the clarified juice add from 4 to 5 pounds of the best granulated sugar, using heat (carefully applied) to dissolve it, assisted by frequent stirring and removal of the scum as formed. Finally, strain the finished product through a muslin strainer. While still hot place the syrup into clean jugs, completely filling them to the top in order to expel all traces of air, cork well and seal with paraffin.

The Labeling of Articles.

By Melvin W. Bamford.

The author contends that it is important to label articles just what they are. He divides the articles into classes, and shows by examples how they can be labeled just what they are, without breeding distrust in the minds of the laity.

Headache Remedies Prepared from Coal-Tar.

By Louis Emanuel.

The author cited a case in his own experience of a suit instituted for damages for selling in a careless manner a package of a proprietary headache remedy. Inasmuch as the remedy was not of his own manufacture, and he had not recommended the remedy, the Court ruled that druggists are not responsible for the composition of proprietary medicines sold by them.

Laboratory Notes.

By Willard Graham.

The author submits the results of a number of analyses of mandrake root, formaldehyde (40 per cent.), licorice extract and manganese dioxide.

A Pharmacist's Note Book.

By Clement B. Lowe.

The author gives the results of his every-day experience in the conduct of the prescription department, innovations in shop furniture, printing, the care of drug store grounds, the Sunday question, etc. The work of the association will be made most profitable by such comparison of ideas and methods among the members.

The Estimation of Free Hydrochloric Acid and Lactic Acid.

By Frederic E. Niece.

The author gives methods which involve gravimetric and volumetric procedure, and which have proven trustworthy and accurate, so far as chemical requirements are concerned.

Substitution Legislation.

By M. I. Wilbert.

The author takes as his text the enactment of the Bostwick-Dowling Bill in New York. The bill, as passed by the Legislature of the State of New York, made it a misdemeanor "to substitute any drug, medicine, food or preparation in lieu of any article prescribed, ordered, required or demanded; or in any other way to deviate from the terms of the prescription, order or demand." The author says:

"Without mincing matters in any way, we must admit that restrictive measures of this kind are but the logical outcome of loss of confidence, and lack of respect and appreciation on the part of the public and its servants. Unfortunately, too, this measure may be considered as a public indorsement of opinions that have been repeatedly expressed, not alone in the daily papers, but also in various medical journals, and even in medical text-books. The reasons for this marked decline in the social status of the pharmacist is, no doubt, to be found in the rampant spirit of commercialism that appears to pervade all branches of the drug business at the present time, to the almost total neglect of progress along professional lines. A rather short-sighted commercial policy appears to be particularly well developed among retail druggists, to the almost absolute disregard of professional or scientific matters."

The solution of this problem appears to be an educational one, and Mr. Wilbert says that "the standard of education for prospective pharmacists must be higher, and that the necessary curriculum must be materially enlarged if the pharmacist of the future is to fit in with other advances in scientific thought. The discussion that is going on in the pharmaceutical journals of England at the present time should not be lost sight of in this country. In England, it appears, there is a movement on foot to either include pharmaceutical training in the university courses, or to enlarge the curricula of the pharmaceutical schools so as to make them conform more closely with scientific courses of the universities."

Scraps from a Note-Book.

By H. F. Ruhl.

This paper contains much information of a practical character for the retail pharmacist, and covers a wide range of subjects, as the calculation of discount, the preparation of a tincture of benzoin, glycerin and rose-water that is free from precipitation, etc.

Home-made Conveniences.

By William O. Frailey.

The author has constructed a simple device for holding glass funnels, making a convenient powder-folder, and gives a plan for indexing the store.

The Prescription Counter.

By Isaac M. Weills.

The author has devised a holder or folded powders which will facilitate the handling of them in case one is suddenly called to attend other matters while getting ready a stock for the box.

State Pharmacy Board.

By Louis Emanuel.

The author cites a number of letters indicating some of the methods which have been resorted to by those who are desirous of securing certificates of proficiency and registration from the State

Pharmacy Board, and yet who are unable to answer 75 per cent. of the questions.

Membership in Pennsylvania Pharmaceutical Association.

By C. A. Weidemann.

Dr. Weidemann believes that the principal cause why 90 per cent. of the pharmacists of the State of Pennsylvania are not affiliated with this association is due to their ignorance of the aims and work of the association.

Fred. E. Niece also had a paper on this subject, in which he suggested the offering of prizes to those members proposing the largest number of new members. Another plan which he proposed for arousing the interest of members as well as non-members was the distribution of printed slips asking for suggestions in regard to a number of questions pertaining to the interests of pharmacy.

Membership in a Local Association.

By D. J. Reese.

The author said that the benefits to be derived from membership in a local association were manifold. The druggist's horizon is not only widened, but he learns to look upon his neighbor as a friend and helper, rather than as a foe.

B. E. Pritchard also presented a paper on this subject, urging druggists never to fail to attend their association meetings, and to exploit their individual opinions. In addition, he spoke of the satisfaction felt by the druggist who cultivates a feeling of cordiality and good-will toward his fellow-druggists.

Boomerang Advertising.

By Wm. O. Frailey.

The author referred to the recent newspaper attacks on the integrity of pharmacists and then asked: "Is not the advertising pharmacist largely to blame for the suspicion and lack of confidence on the part of the public and lay press?" A number of questionable forms of advertising were then given, after which the writer pointedly asked: "What inference can a heretofore unsuspecting public take

from such mercenary appeals as the above, but that the profession of pharmacy is a thing of the past and that pharmacists as a class are dishonest and unscrupulous?" He said that the pharmacist who advertises himself to the discredit of his competitors is engaging in a practice which not only reflects on pharmacists in general, but which sooner or later will react on his own business.

The Pharmacist and His Neighbor.

By Jacob Eppstein.

Mr. Eppstein alluded to the question of drug-store consolidation, and said that if the small dealer would retain the trade of his neighborhood, he must reciprocate by patronizing his neighbors in other lines of business.

Post-Office Stations in Drug Stores.

By O. W. Osterlund.

The speaker stated that in view of the amount of clerical work connected with a postal sub station, it could not be looked upon as other than a side line for attracting and accommodating patrons.

Pharmacy Abroad.

By C. N. Boyd.

Mr. Boyd gave an interesting account of the drug shops he visited while on a recent trip through Southern Europe, Northern Egypt, and parts of the Holy Land.

Prevention of Deterioration and Waste of Stock.

By D. J. Thomas.

The author advised taking a frequent inventory of stock, once a year at least, as this reveals just what is on hand and its medicinal and commercial value. He also said that each article should have assigned to it a specially selected place, as it was only by having a definite knowledge of the physical characteristics of each item that loss by deterioration could be prevented.

The Relation of the Pharmacist to Public Affairs.

By John F. Patton.

This question was discussed at some length, and in conclusion Mr. Patton said that the man who undertakes to serve the public in so responsible an occupation as that of pharmacy, can not do it successfully without improving every opportunity for intellectual development.

PHILADELPHIA COLLEGE OF PHARMACY.

The quarterly meeting of the members of the College was held Monday, June 29th, at 4 P.M., in the Library, the President, Howard B. French, in the chair. There were sixteen members present. The minutes of the semi-annual meeting, held March 30th, were read and approved. The minutes of the Board of Trustees for April 7th and May 5th were read by the acting Registrar, F. P. Stroup, and approved. The Historical Committee presented a preliminary report. They had held a number of meetings, and had made a systematic endeavor to gather all available information relating to the early history of pharmacy, chemistry, and allied callings in the neighborhood of Philadelphia, and the early history of the College. It had been proposed to enlarge the work and prepare a list of the graduates of the College, with the career of each. A circular letter and list of queries will be forwarded to every Alumnus and to others who can furnish information for the work. The Chairman of the Committee asks the prompt co-operation of all who can assist in this work, which will probably extend over quite a period of time, and require persistent systematic labor and correspondence.

The Committee on Necrology reported the names of four active and three corresponding members who had died during the year, as follows: Active members: George W. Kennedy, of Pottsville, Pa.; T. Morris Perot, of Philadelphia; Jacob L. Smith, of Philadelphia; W. Nelson Stem, of Philadelphia. Corresponding members—Frederick Baden Benger, of Manchester, England; Ernst Biltz, Erfurt, Germany; Bruno Hirsch, Dresden, Germany. Appropriate memoirs of all these deceased members have been published in recent issues of the AMERICAN JOURNAL OF PHARMACY.

The delegates to the twenty-sixth annual meeting of the Pennsylvania Pharmaceutical Association at Eaglesmere, June 23-25, reported (see this JOURNAL, page 390) that the meeting was one of the most successful in its history.

The President announced the following appointments: Delegates to the American Pharmaceutical Association—Professor Joseph P. Remington, Professor Henry Kraemer, Professor C. B. Lowe, Mr. Mahlon N. Kline, and Mr. William L. Cliffe. Committee on Nominations—Professor Samuel P. Sadtler, Professor C. B. Lowe, E. M. Boring, William McIntyre and M. I. Wilbert. Committee on Necrology—Professor Henry Kraemer, Gustavus Pile and Joseph W. England. Adjourned.

C. A. WEIDEMANN, *Secretary.*